



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,360	04/25/2005	Gert Joly	L0004B/US	6317

30522 7590 03/23/2006

KRATON POLYMERS U.S. LLC
WESTHOLLOW TECHNOLOGY CENTER
3333 HIGHWAY 6 SOUTH
HOUSTON, TX 77082

EXAMINER

TESKIN, FRED M

ART UNIT	PAPER NUMBER
----------	--------------

1713

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/510,360

Applicant(s)

JOLY ET AL.

Examiner

Fred M. Teskin

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>082205</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1713

The preliminary amendment of October 5, 2004 has been entered. Accordingly, claims 9-21 are currently pending and under examination herein.

Claims 16-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 16 recites the broad recitations "at least 80%" and "at most 20 mole %" (see subparagraphs vi. and vii.), and the claim also recites "preferably of at least 90%" and "preferably of at most 10 mole %", which are narrower statements of the respective ranges.

Art Unit: 1713

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 863 193 ("Kraton").

The claimed invention is a styrenic block copolymer, wherein

- i. the poly(styrene) content (PSC) is from 17 to 24 wt%,
- ii. the styrenic block copolymer has a molecular structure according to the

general formula

$S - EB - S$ (1) or $(S - EB)_n$ X (2),

wherein each S independently is a polymer block of styrene and EB is a hydrogenated polymer block of butadiene, n is an integer equal to or greater than 2,

Art Unit: 1713

and X is the residue of a coupling agent,

iii. the apparent molecular weight of the poly(styrene) blocks (S) is in the range of from 7,500 to 8,500,

iv. the apparent molecular weight of the complete styrenic block copolymer is in the range of from 80,000 to 150,000,

v. the 1,2 addition degree (vinyl content) in the poly (butadiene) block (EB) precursor is in the range of from 60 to 80 (mole/mole),

vi. the block EB has a hydrogenation of at least 80% and preferably of at least 90%, and

vii. an optional diblock S-EB content of at most 20 mole % and preferably of at most 10 mole %, relative to the total block copolymer amount.

Kraton discloses sealant compositions comprising SEBS block copolymers. Specifically disclosed block copolymers differ from the claimed invention with respect to claim properties i., iii., and iv. See Table 1 (page 6) in conjunction with the degree of hydrogenation taught at page 3, lines 43-45.

However, as to these parameters, Kraton plainly teaches (i) that the polystyrene content is preferably in the range from 15 to 45 % by weight (total polymer basis), more preferably from 20 to 40 wt %, even more preferably from 25 to 35 wt %; (ii) that the vinyl aromatic hydrocarbon block weight average molecular weight is preferably 5,000 to 32,000; and (iii) that the SEBS block copolymer preferably has an overall weight average molecular weight of from 45,000 to 200,000. (Kraton, page 2, paragraph 6 and page 4, paragraphs 17 and 18.)

Applicants' claimed ranges for PSC and apparent molecular weights overlap substantially the corresponding ranges disclosed by Kraton and therefore are rendered obvious by Kraton. One of ordinary skill would have been motivated to select values of PSC and apparent molecular weight for the poly(styrene) blocks and the overall copolymer of Kraton within the ranges of claims 16-21 in the expectation of obtaining a composition possessing equivalent sealant utility.

In cases involving overlapping ranges, such as the present case, it has consistently been held that even a slight overlap in range establishes a *prima facie* case of obviousness; see, e.g., *In re Woodruff*, 16 USPQ2d 1936 (claimed invention rendered obvious by prior art reference whose disclosed range ("about 1-5% carbon monoxide") abutted the claimed range ("more than 5% to about 25%" carbon monoxide) and *In re Geisler*, 43 USPQ2d at 1365 (acknowledging that claimed invention rendered *prima facie* obvious by prior art reference whose disclosed range (50-100 Angstroms) overlapped the claimed range (100-600 Angstroms)).

Accordingly, the subject matter of claims 16-21 would have been *prima facie* obvious to one having ordinary skill in the art at the time of invention.

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Djiauw et al is pertinent to high 1,2-content thermoplastic elastomer/oil/polyolefin compositions. The thermoplastic elastomer is of A-B-A or (A-B)_nX structure, but each of

Art Unit: 1713

the individual aromatic endblock (A) must have a molecular weight of at least about 20,000 (col. 3, ll. 13-15).

Claims 9-15 are deemed free of the prior art.

The following is a statement of reasons for the indication of allowable subject matter: Claims 9 and 15 each specify a composition comprising from 5 to 40 wt % of a styrenic block copolymer and a polyolefin in amount of at least 40 wt %, wherein the styrenic block copolymer is characterized by, *inter alia*, polystyrene blocks (S) of an apparent molecular weight in the range of from 6,000 to 9,000.

Shibata et al and Kraton are considered the closest prior art. Kraton, however, is directed to a sealant composition comprising 20-400 parts by weight of an adhesion promoting resin such as hydrogenated hydrocarbon tackifying resin, and does not teach or suggest a composition comprising at least 40 wt % of a polyolefin and from 5 to 40 wt % of a styrenic block copolymer as claimed.

Shibata et al disclose hydrogenated diene block copolymer having a total bound styrene content of 22.2 %, a vinyl content of butadiene portion in block B of 65 %, a hydrogenation degree of 98 % and a molecular weight of 115,000 (Copolymer Q-5, Example 9), but nowhere teach or imply a poly(styrene) blocks molecular weight as claimed. Nor does the reference provide sufficient information concerning the styrene polymerization conditions to justify an inference that this undisclosed feature of the claimed invention inheres in any specific embodiment of Shibata et al.


Art Unit: 1713

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/03-17-06


FRED TESKIN
PRIMARY EXAMINER
1713